

SQMS Quantum for Science - March 2024 (London)

Report of Contributions

Contribution ID: 1

Type: **not specified**

Dark matter landscape motivating new ideas in quantum sensors (theory intro)

Friday, 22 March 2024 09:30 (20 minutes)

Presenters: HARNIK, Roni (Fermilab); HARNIK, Roni (Fermilab)

Session Classification: Morning session

Contribution ID: 2

Type: **not specified**

Fermilab - Matt Hollister

Wednesday, 20 March 2024 13:30 (30 minutes)

Presenter: HOLLISTER, Matt

Session Classification: Day 1, session 2

Contribution ID: 3

Type: **not specified**

Gran Sasso INFN

Wednesday, 20 March 2024 14:00 (30 minutes)

Presenter: PIRRO, Stefano (INFN - Laboratori Nazionali del Gran Sasso, Italy)

Session Classification: Day 1, session 2

Contribution ID: 4

Type: **not specified**

SnoLab, Andrew Kubik

Wednesday, 20 March 2024 14:30 (20 minutes)

Session Classification: Day 1, session 2

Contribution ID: 5

Type: **not specified**

Boulby

Wednesday, 20 March 2024 15:20 (20 minutes)

Presenter: SCOVELL, Paul (STFC)

Session Classification: Day 1, session 3: Underground / Low Temperature

Contribution ID: 6

Type: **not specified**

INFN

Wednesday, 20 March 2024 15:40 (20 minutes)

Presenter: CARDANI, Laura

Session Classification: Day 1, session 3: Underground / Low Temperature

Contribution ID: 7

Type: **not specified**

Jon Prance - Isolab

Wednesday, 20 March 2024 16:00 (20 minutes)

Presenter: PRANCE, Jonathan

Session Classification: Day 1, session 3: Underground / Low Temperature

Contribution ID: 8

Type: **not specified**

Jan Nyeki- Cryofree Demag

Wednesday, 20 March 2024 16:20 (20 minutes)

Session Classification: Day 1, session 3: Underground / Low Temperature

Contribution ID: 9

Type: **not specified**

Nexus Enectali Figueroa

Session Classification: Day 1, session 3: Underground / Low Temperature

Contribution ID: **10**

Type: **not specified**

Panagiotis Spentzouris

Session Classification: Day 1, session 3: Underground / Low Temperature

Contribution ID: 11

Type: **not specified**

Quantum technologies for fundamental physics (experiment intro)

Friday, 22 March 2024 11:20 (20 minutes)

Presenter: SHIPSEY, Ian (University of Oxford (GB))

Session Classification: Morning session

Contribution ID: 12

Type: **not specified**

New ideas for testing particle dark matter and phase transitions in He-3

Friday, 22 March 2024 11:40 (20 minutes)

Presenter: CASEY, Andrew

Session Classification: Morning session

Contribution ID: 13

Type: **not specified**

New ideas for axion searches in superfluid helium

Friday, 22 March 2024 12:00 (20 minutes)

Presenter: FOSTER, Joshua

Session Classification: Morning session

Contribution ID: 14

Type: **not specified**

DM and GW searchers with Atom Interferometers

Presenter: BUCHMULLER, Oliver (Imperial College (GB))

Session Classification: Day 3 session 3

Contribution ID: 15

Type: **not specified**

New ideas for low-frequency gravitational wave detection with quantum sensors

Friday, 22 March 2024 15:00 (20 minutes)

Presenter: KOVACHY, Tim

Session Classification: Day 3 session 3

Contribution ID: 16

Type: **not specified**

Quantum sensor needs for dark matter axion searches

Friday, 22 March 2024 12:20 (20 minutes)

Presenter: CHOU, Aaron

Session Classification: Morning session

Contribution ID: 17

Type: **not specified**

Cavity based searches for new particles and gravitational waves

Friday, 22 March 2024 15:20 (20 minutes)

Presenter: GIACCONE, Bianca (Fermi National Accelerator Laboratory)

Session Classification: Day 3 session 3

Contribution ID: 18

Type: **not specified**

SERAPH: Dark Matter using SRF cavities and Superconducting Qubits

Friday, 22 March 2024 16:20 (20 minutes)

Presenter: CERVANTES, Raphael

Session Classification: Day 3: session 4

Contribution ID: 19

Type: **not specified**

Quantum computers and their role in understanding fundamental physics

Friday, 22 March 2024 09:50 (20 minutes)

Presenter: DE JONG, Wibe

Session Classification: Morning session

Contribution ID: 20

Type: **not specified**

The 'Quantum Sensors for the Hidden Sector' project

Friday, 22 March 2024 16:40 (20 minutes)

Presenter: Prof. DAW, Ed (The University of Sheffield)

Session Classification: Day 3: session 4

Contribution ID: 21

Type: **not specified**

Quantum Simulators for Fundamental Physics

Friday, 22 March 2024 10:10 (20 minutes)

Presenters: WEINFURTNER, Silke; WEINFURTNER, Silke (The University of Nottingham)

Session Classification: Morning session

Contribution ID: 22

Type: **not specified**

New ideas for gravitational wave detection and axion searches (theory)

Friday, 22 March 2024 14:20 (20 minutes)

Presenters: ELLIS, Sebastian (Universite de Geneve (CH)); ELLIS, Sebastian (SLAC National Accelerator Laboratory (US))

Session Classification: Day 3 session 3

Contribution ID: 23

Type: **not specified**

Microwave-Optical Transduction for Quantum Sensors and Sensor Networks

Friday, 22 March 2024 14:40 (20 minutes)

Presenters: ZORZETTI, Silvia; Dr ZORZETTI, Silvia (Fermi National Accelerator Lab. (US))

Session Classification: Day 3 session 3

Contribution ID: 24

Type: **not specified**

Understanding and eliminating materials sources of decoherence in superconducting qubits

Thursday, 21 March 2024 09:30 (25 minutes)

Presenter: MURTHY, Akshay (Fermilab)

Session Classification: Day 2, session 1

Contribution ID: 25

Type: **not specified**

Tileable 3D-integrated superconducting circuits

Thursday, 21 March 2024 09:55 (25 minutes)

Presenter: LEEK, Peter (Oxford)

Session Classification: Day 2, session 1

Contribution ID: 26

Type: **not specified**

Alternating-Bias Assisted Annealing of JJs for Transmons

Thursday, 21 March 2024 10:20 (20 minutes)

Presenter: PAPPAS, David (Rigetti)

Session Classification: Day 2, session 1

Contribution ID: 27

Type: **not specified**

Electron-beam annealing of Josephson junctions for frequency tuning of quantum processors

Thursday, 21 March 2024 10:40 (25 minutes)

Presenter: SHELLY, Connor (Oxford Quantum Circuits)

Session Classification: Day 2, session 1

Contribution ID: 28

Type: **not specified**

Quasiparticles vs TLS

Thursday, 21 March 2024 11:35 (25 minutes)

Presenter: FAORO, Lara (Google)

Session Classification: Day 2, session 2

Contribution ID: 29

Type: **not specified**

Quasiparticle dynamics in on-chip superconducting microwave resonator arrays at single photon regime for hybrid quantum circuits

Thursday, 21 March 2024 12:25 (25 minutes)

Presenter: DELFANAZARI, Kaveh (University of Glasgow)

Session Classification: Day 2, session 2

Contribution ID: 30

Type: **not specified**

Investigating Electronic Properties of Materials for Superconducting Qubits through Scanning Tunneling Microscopy and Spectroscopy Studies

Thursday, 21 March 2024 14:10 (25 minutes)

Presenter: IAVARONE, Maria (Temple University)

Session Classification: Day 2, session 3

Contribution ID: 31

Type: **not specified**

Imaging single TLS defects in live quantum circuits using scanning gate microscopy

Thursday, 21 March 2024 14:35 (25 minutes)

Presenter: BANERJEE, Riju (National Physical Laboratory)

Session Classification: Day 2, session 3

Contribution ID: 32

Type: **not specified**

Cooling, noise mitigation, and decoherence in quantum circuits immersed in a quantum fluid bath

Thursday, 21 March 2024 15:00 (25 minutes)

Presenter: SAUNDERS, John (Royal Holloway, University of London)

Session Classification: Day 2, session 3

Contribution ID: 33

Type: **not specified**

Simulating interactions between a qubit and a resonant two-level system bath

Thursday, 21 March 2024 15:45 (25 minutes)

Presenter: ROSEN, Yaniv (Lawrence Livermore National Laboratory)

Session Classification: Day 2, session 4

Contribution ID: 34

Type: **not specified**

Characterisation of a 3D aluminium cavity for the QSHS experiments

Thursday, 21 March 2024 16:10 (25 minutes)

Presenter: PASHKIN, Yuri (Lancaster University)

Session Classification: Day 2, session 4

Contribution ID: 35

Type: **not specified**

Experience with TLS effect on the quality factor in 3D SRF Cavities

Thursday, 21 March 2024 16:35 (25 minutes)

Presenter: ROMANENKO, Alexander (Fermilab)

Session Classification: Day 2, session 4

Contribution ID: 36

Type: **not specified**

A theory for quasiparticle dissipation generated by embedded two-level tunneling atoms

Thursday, 21 March 2024 12:00 (25 minutes)

Presenter: SAULS, James (LSU)

Session Classification: Day 2, session 2

Contribution ID: 37

Type: **not specified**

STFC Quantum Landscape

Wednesday, 20 March 2024 13:00 (15 minutes)

Presenter: Prof. NEWBOLD, Dave (STFC Rutherford Appleton Laboratory (GB))

Session Classification: Day 1, Welcome Session

Contribution ID: 38

Type: **not specified**

The DOE National Quantum Information Science Research Centers

Wednesday, 20 March 2024 13:15 (15 minutes)

Presenters: GRASELLINO, Anna; DE JONG, Wibe

Session Classification: Day 1, Welcome Session